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BEYER WEAVER & THOMAS LLP
P.O. BOX 70250
OAKLAND, CA 94612-0250

EXAMINER	
BOUTAH, ALINA A	

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/587,721
Filing Date: June 05, 2000
Appellant(s): HO, WINGA

C. Douglass Thomas
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 18, 2004.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 1-20 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

1. International PCT Application No. WO 95/14971 to Desnoyers et al. (hereinafter referred to as Desnoyers).

2. European Patent Application No. 0851624 to Uota et al. (hereinafter referred to as Uota).

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 95/14971 issued to Desnoyers in view of EP 0851624 issued to Uota.

This rejection is set forth in a prior Office Action, mailed on December 12, 2003.

Regarding claim 1, Desnoyers teaches a method for transmitting encoded data between synchronized sending and receiving digital systems across a lossy transmission media, said sending and receiving digital systems maintaining encoder and decoder information records, said method comprising the steps of:

encoding packet data to be transmitted by said sending digital system using encoding information (page 3, lines 1-4);

transmitting the encoded packet data to said receiving digital system as a packet including a header having a packet number and a tag identifying the encoding information used to encode the packet data (page 3, lines 4-5);

when the packet is received by said receiving digital system, examining the header to determine the encoding information used to encode said packet data (page 3, lines 5-7); and

decoding the packet using corresponding decoder information in said decoder information (page 1, lines 26-28).

However, Desnoyers fails to explicitly teach: said encoder information record being previously acknowledged by said receiving digital system; building a new encoder information record including the encoding information used to encode said packet data as well as the packet data; updating the decoder information in said decoder information record with said packet data; acknowledging processing of the packet to said sending digital system to enable said sending digital system to update said encoder information so that said new encoder information record is used to encode packet data; and when the packet is lost, at the sending digital system rebuilding the new encoder information record without the lost packet data.

Uota teaches a data transmission system that transmits data between a sending and receiving digital systems, wherein a packet data to be sent is constructed of information record being previously acknowledged by said receiving digital system (abstract; col. 2, lines 52-54; figures 4 and 5);

building a new information record including the information used to construct said packet data as well as the packet data (abstract; col. 2, lines 52-54; figures 3-5);

updating the information in said receiver information record with said packet data (abstract; col. 3, lines 2-10, and 32-35; figures 3-5);

acknowledging processing of the packet to said sending digital system to enable said sending digital system to update said information so that said new information record is used to send packet data (abstract; col. 2, line 45 to col. 3, line 40; figures 4 and 5; figures 3-5); and

when the packet is lost, at the sending digital system rebuilding the new encoder information record without the lost packet data (col. 3, lines 8-12, and lines 29-40; figures 3-5).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the teaching of Desnoyers by combining it with the teaching of Uota because by maintaining an acknowledged information record from the decoder, the sender is able to encode and retransmit a data packet using the record that has no error, thus reducing the chance of packet lost and optimizing the encoding process.

Regarding claim 2, Desnoyers teaches the method of claim 1, wherein said rebuilding step is performed when a packet is received out of sequence by said receiving system and a threshold amount of time elapses without the missing packet being received (page 6, line 12 to page 7, line 31, page 10, lies 12-22).

Regarding claim 3, Desnoyers teaches the method of claim 2 wherein packets received out of sequence are stored in a queue and wherein a packet timer is initiated by said receiving

digital system to count said predetermined amount of time when a packet is received out of sequence, said packet timer being stopped when said missing packet is received (page 6, line 12 to page 7, line 31).

Regarding claim 4, Desnoyers teaches the method of claim 3, wherein said rebuilding step includes the step of sending a synch control packet from said receiving digital system to said sending digital system, and synch control packet including a tag identifying the last packet processed by said receiving digital system, said sending digital system using said synch control packet to rebuild said new encoded information record (page 6, line 12 to page 11, line 30).

Regarding claim 5, Desnoyers teaches the method of claim 4 wherein said rebuilding step further includes the steps of initiating a synchronization timer at said receiving digital system when said synch control packet is sent; stopping said timer when an acknowledgment is received from said sending digital system in response to said synch control packet; and resending the synch control packet and reinitiating the synchronization timer if said synchronization timer expires and an acknowledgment has not been received (page 6, line 12 to page 11, line 30).

(Amended) Regarding claim 6, Desnoyers teaches the method of claim 5 wherein said rebuilding step further includes the steps of incrementing a counter each time a synch control packet is sent; comparing the value of said counter to determine if the value equals a threshold prior to resending the synch control packet and reinitiating the synchronization timer; and

resetting the communication link between said sending and receiving digital systems if the value of said counter equals said threshold value (page 6, line 12 to page 11, line 30).

Regarding claim 7, Desnoyers teaches the method of claim 1 wherein during said acknowledging step, and acknowledgment packet is returned to said sending digital system, said acknowledgment packet including identifying the last packet processed by said receiving digital system (page 6, line 12 to page 11, line 30).

Regarding claim 8, Desnoyers teaches the method of claim 1 wherein during said acknowledging step, an acknowledgment header encapsulating data packets is returned to said sending digital system, said acknowledgment header identifying the last packet processed by said receiving digital system (page 6, line 12 to page 11, line 30).

Regarding claim 9, Desnoyers teaches the method of claim 1 further comprising the steps of, prior to decoding said packets by said receiving digital system, examining said packets to detect corrupts packets and discarding corrupted packets (page 6, line 12 to page 11, line 30).

Regarding claim 10, Desnoyers teaches the method of claim 9 wherein during said examining step a cyclic redundancy check is performed on said packets (page 3, lines 17-27).

Regarding claim 11, Desnoyers teaches the method of claim 10 further comprising the step of discarding received packets having packet numbers outside of a defined range of expected packet numbers (page 6, line 12 to page 11, line 30).

Regarding claim 12, Desnoyer teaches the method of claim 6 further comprising the steps of, prior to decoding said packets by said receiving digital system, examining said packets to detect corrupted packets and discarding corrupted packets (page 4, lines 12-34).

Regarding claim 13, Desnoyer teaches the method of claim 12 wherein during said examining step a cyclic redundancy check is performed on said packets (page 3, lines 17-27).

Regarding claim 14, Desnoyer teaches the method of claim 13 further comprising the step of discarding received packets having packet numbers outside of a defined range of expected packet numbers (page 4, lines 12-34 to page 5, lines 1-24).

Regarding claim 15, Desnoyer teaches the method of claim 1 wherein during encoding, the packet data is compressed, encrypted and/or scrambled (page 1, lines 26-28).

Regarding claim 16, Desnoyer teaches the method of claim 9 wherein during encoding, the packet data is compressed, encrypted and/or scrambled (page 1, lines 26-28).

Claims 17-20 relate to a communication system that carry out communications in manners that are similar to claims 1-4, respectively, therefore are also rejected under the same rationale.

*(11) **Response to Argument***

Appellant argues that Uota fails to teach or suggest the building or rebuilding of an information record used to encode packet data. The Patent Office disagrees and respectfully submits that this feature is indeed taught in Uota's reference as cited above.

As admitted by Appellant, Uota teaches a method of constructing data frames to enable sending and receiving systems to determine when a transmitted data frame is not being properly received. Each data frame includes a flag sequence field, a forward information field, a backward information field, a user data field, and an error detection field. The backward information field includes **history** information of received frame in the form of an 8-bit string (see page 6 last paragraph of Appeal Brief and figures 3-5 of Uota reference).

According to The Authoritative Dictionary of IEEE Standards Terms, "encoding" is defined as "the representation of data bits and nondata information for signal transmission across a serial communications medium. Nondata information includes indications of start and end of octates and **frame** transmission." Based on the IEEE definition, the data frame transmission disclosed by Uota in figures 3-5 is equivalent to an encoded data packet.

Since Uota's data frame includes history information, it is interpreted as an information record used to encode packet data as specified in the claimed invention.

In response to Appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

ANB

ANB
April 15, 2005

Conferees

BEYER WEAVER & THOMAS LLP
P.O. BOX 778
BERKELEY, CA 94704-0778